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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/676,060

10/03/2003

Toshiaki Ariyoshi

IIW-032

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12/08/2006

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EXAMINER

RUTHKOSKY, MARK

ART UNIT

PAPER NUMBER

1745

DATE MAILED: 12/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/676,060

Applicant(s)

ARIYOSHI ET AL.

Examiner

Mark Ruthkosky

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) 2-5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of claim 1 in the reply filed on 9/7/2006 is acknowledged. The traversal is on the ground(s) that examining all claims would not place serious burden on the examiner. This is not found persuasive because applicant's amended claims include fuel cells having different patentable features that require separate research and consideration. For example, claim 1 requires a plurality of cells in a specific arrangement with a plurality of separators, a processing circuit processing an electrical output signal and a connector that includes a plurality of slots that enclose the terminals. These elements are not claimed in the other inventions of the application. Therefore, claim 1 has been elected and will be examined accordingly. The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

The rejection of claims 1-3 under 35 U.S.C. 102(b) as being anticipated by Einhart et al. (EP 1,001,666) has been overcome by applicant's amendment.

The rejection of claims 2-3 under 35 U.S.C. 102(b) as being anticipated by Early et al. (US 4,310,605) has been overcome by applicant's amendment.

Claim Rejections - 35 USC § 103

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Einhart et al. (EP 1,001,666), in view of Tanaka et al (JP 09-283,166) and further in view of Early et al. (US 4,310,605.)

Einhart et al. (EP 1,001,666) teaches a fuel cell comprising a fuel cell stack including a plurality of fuel cells sandwiched by separators and electrically connected through the separators (figure 1.) The cells are arranged into clusters and include clusters of terminals extending from the separators. The fuel cell includes a processing circuit connected to the separator. A plurality of connector modules include a connector portion and a main body portion that is smaller in width than the connector portion (figures 4-7.) The terminal clusters are alternately provided at a first side of a first end of a separator and the other at a second side of the first end (see figure 3 and the corresponding text.) The fuel cell is enclosed in a case (col. 4, line 55, col. 7, line 55.) The circuit can be used to monitor operating parameters like current or voltage (p. 44.) Einhart et al. (EP 1,001,666) does not teach that the connector includes a plurality of slots enclosing the terminal.

Tanaka et al (JP 09-283,166) teaches a fuel cell stack including a plurality of fuel cells sandwiched by separators and electrically connected through the separators (figures 1-4.) The fuel cell includes a processing circuit connected to the separator through terminals (6) formed in separator holes on the same side of the fuel cell stack. A voltage-measuring device is connected to terminals of the separator plate. A connector and processing circuit are noted (abstract.) The reference does not teach that the connector includes a plurality of slots enclosing the terminal.

Art Unit: 1745

Early et al. (US 4,310,605) teaches a fuel cell comprising a fuel cell stack including a plurality of fuel cells sandwiched by separators and electrically connected through the separators (figures 1-3.) The cells are arranged into clusters and include clusters of terminals extending from the separators (see col. 5, line 63-col. 6, line 13, figures 6-7 and 9.) A sheet body is disclosed between cell clusters. The fuel cell includes a processing circuit connected to the separators (figure 7.) A plurality of connector modules include a connector portion and a main body portion that is smaller in width than the connector portion (figures 6-7 and 9.) The terminal clusters are alternately provided at a first side of a first end of a separator and the other at a second side of the first end (see figures 6, 7, and 9 and the corresponding text.) The connector includes a plurality of slots enclosing the terminal (figures 3, 5 and the corresponding text.) Early et al. (US 4,310,605) does not teach a casing enclosing the processing circuit and connector.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a terminal connection to the circuit in Einhart, wherein the connector includes a plurality of slots enclosing the terminal as taught by Early (figures 3, 5 and the corresponding text.) The connection allows for a secure mating between the terminal and the circuit and the connecting of the terminals of the substacks. As noted in the reference, the conductive circuit is also used to transfer cooling fluid in a secure manner, while conducting electrons from the fuel cell. The terminals are taught in the art to be formed in the separator plate. The artisan would have found the claimed invention to be obvious in light of the teachings of the references.

Response to Arguments

Applicant's arguments with respect to the amended claims have been considered but are moot in view of the new ground(s) of rejection. Applicant's amendments have overcome the prior art of record. New rejections have been made based on the amended claims.

With regard to the Einhart reference, the figures disclose all of the separator terminals on the same side of the fuel cell (figures 1-2 and the corresponding text.) The terminal is taught to protrude from the separator in figure 3. The casing urges the circuit against the terminal to conduct electrons (col. 4, lines 25-end.)

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

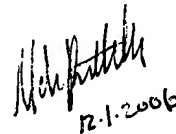
Art Unit: 1745

Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Ruthkosky whose telephone number is 571-272-1291. The examiner can normally be reached on FLEX schedule (generally, Monday-Thursday from 9:00-6:30.) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free.)

Mark Ruthkosky
Primary Patent Examiner
Art Unit 1745



12-1-2006